

REMARKS

Reconsideration of this application, as amended, is respectfully requested.

I. Status of the Claims

Claims 1-4 are pending in this application.

Claims 1 and 2 have been amended. The amendments do not add new matter.

II. Rejections under 35 U.S.C. § 103

Claims 1-4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 2002 180162 ("JP '162") in view U.S. Patent No. 5,628,046 to Dautzenberg et al. ("Dautzenberg").

The Examiner states that JP '162 describes a wear resistant bearing for a motor fuel pump comprising a Cu-based sintered body of compacted powders having a composition in weight of 1-8% graphite, 0.1-0.9% P and 20-40% Ni and having a porosity of 5-25%. The Examiner contends that the content ranges of graphite, P and Ni in the Cu-based sintered body of JP '162 overlap the claimed ranges, and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed ranges with expected success. The Examiner also admits that JP '162 does not disclose that the sintered body is sized within the range of 400 to 500 MPa, as recited in claims 1 and 2. The Examiner states that Dautzenberg discloses sizing sintered articles for smoothing roughness and admits that Dautzenberg does not specify a pressure range. The Examiner contends that the pressure is a result-effective variable, because it would directly affect the smoothness of the surface as disclosed by Dautzenberg. The Examiner contends that it would therefore have been obvious to one of ordinary skill in the art at the time of the invention to optimize the pressure of the sizing described in Dautzenberg in order to achieve a desired smoothness of the surface. Applicants respectfully traverse the rejection.

It is respectfully submitted that the present invention would not have been obvious to one of ordinary skill in the art, in view of JP '162 and Dautzenberg.

Claims 1 and 2 have been amended to include the feature that "the blended base powders are press-molded into a compacted power, within the range of 400 to 500 MPa." As noted above, the Examiner admits that both JP '162 and Dautzenberg do not disclose the claimed pressure but considers that the choice of pressure is obvious. Applicants disagree. It is the specific choice of pressures that provide some of the advantages of the invention. The pressure is chosen to keep the surface pores from being suppressed and improves the dimensional accuracy of the sintered body.

JP '162 discloses a molding pressure of only 150-300 MPa (see paragraph [0010]) and one of ordinary skill in the art is not going to exceed the values taught in a reference. Further, Dautzenberg is silent regarding his molding pressures. Silence provides no motivation to one of ordinary skill in the art to optimize anything not already taught. At best, the combination JP '162 and Dautzenberg only teaches one of ordinary skill in the art to optimize Dautzenberg to a molding pressure between 150-300 MPa. Neither reference alone or in combination teach or suggest all of the elements claimed in the present invention. The Examiner is using improper hindsight to say that the Applicants' invention is somehow obvious. It is only with hindsight that one of ordinary skill in the art would reach the claimed pressure range give the teachings of JP '162 and Dautzenberg.

Additionally, the combination of JP '162 and Dautzenberg is improper and Applicants traverse the combination. Both references are using sintering temperatures outside each other's ranges. Temperature is one of the variables in sintering and one of ordinary skill in the art would not be motivated to combine references with mutually exclusive sintering temperature ranges, since the benefits of whatever else is taught may be lost by the alteration in temperature.

Further, claim 1 recites a wear resistant bearing with a sintered body which "has a structure in which pores are dispersed on a basis material of Cu-Ni alloy particles at a porosity within a range of 8 to 18%." Similarly, independent claim 2 recites a wear resistant bearing with a sintered body

which “has a structure in which pores are dispersed on a basis material of Cu-Ni alloy particles.” In contrast, Dautzenberg describes a process for producing sintered articles with high density. (See Dautzenberg, column 1, lines 6-9.) Dautzenberg teaches away from the formation of a sintered body with pores dispersed therein, as recited in the claims. Dautzenberg’s process is carried out “to form structural component parts having only an extremely small pore volume, i.e., a density (e.g. 95 to 98%) verging on the highest possible theoretical density of the work material.” (See Dautzenberg, column 3, lines 6-8.) The sizing step described in Dautzenberg (column 4, lines 12-15) results in deformation of the surface of the very dense component parts and would take part in further decreasing the pores to the described “extremely small pore volume.”

It is respectfully submitted that it would not have been obvious to a person of ordinary skill in the art to size the wear resistant bearing of JP ‘162 in view of Dautzenberg to form the recited wear resistant bearing with pores dispersed therein, as recited in independent claims 1 and 2. Further, it would not have been obvious in view of Dautzenberg to produce a bearing with a porosity between 8 and 18% as recited in independent claim 1 and dependent claim 3.

Neither JP ‘162 nor Dautzenberg, alone or in combination (if the combination is at all proper), teach or suggest all of the elements of the claimed invention. Reconsideration and withdrawal of the rejection of claims 1-4 under 35 U.S.C. § 103(a) are respectfully requested.

CONCLUSION

Each and every point raised in the Office Action dated January 9, 2008 has been addressed on the basis of the above amendments and remarks. In view of the foregoing it is believed that claims 1-4 are in condition for allowance and it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining which the Examiner believes could be resolved through a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

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Respectfully submitted,

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